

# PRIOR ART

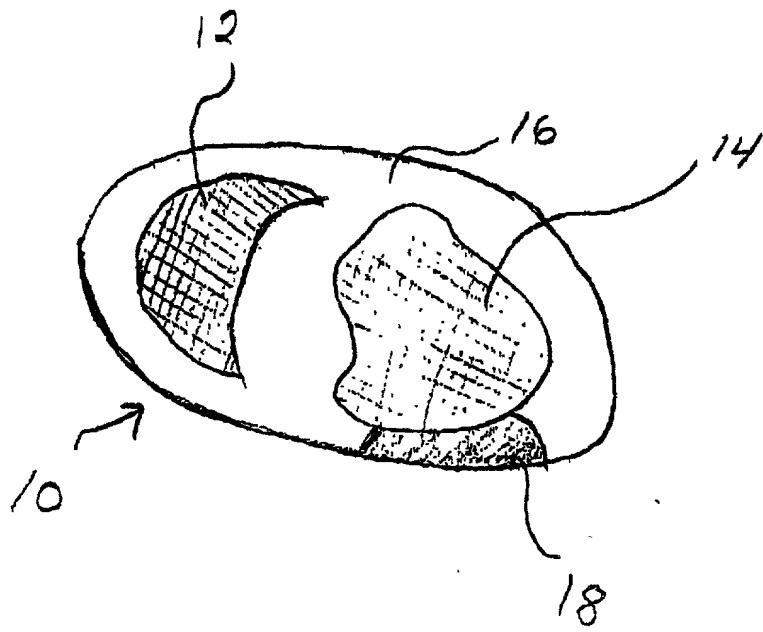


Fig. 1

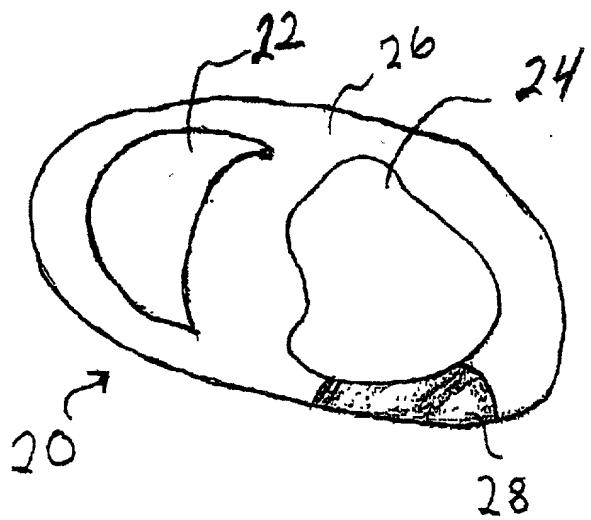


Fig. 2

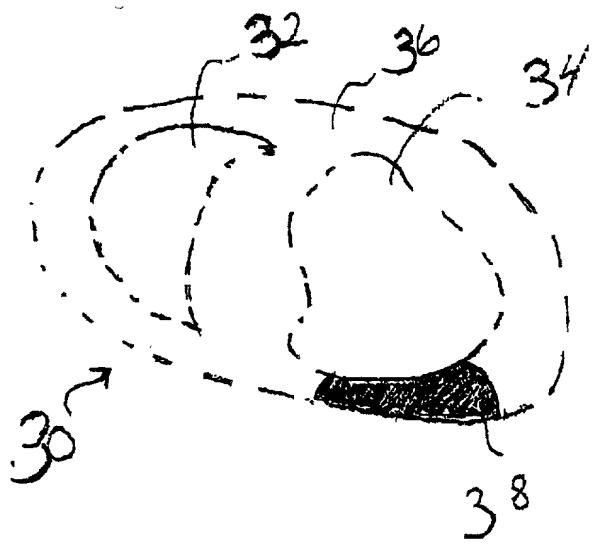


Fig. 3

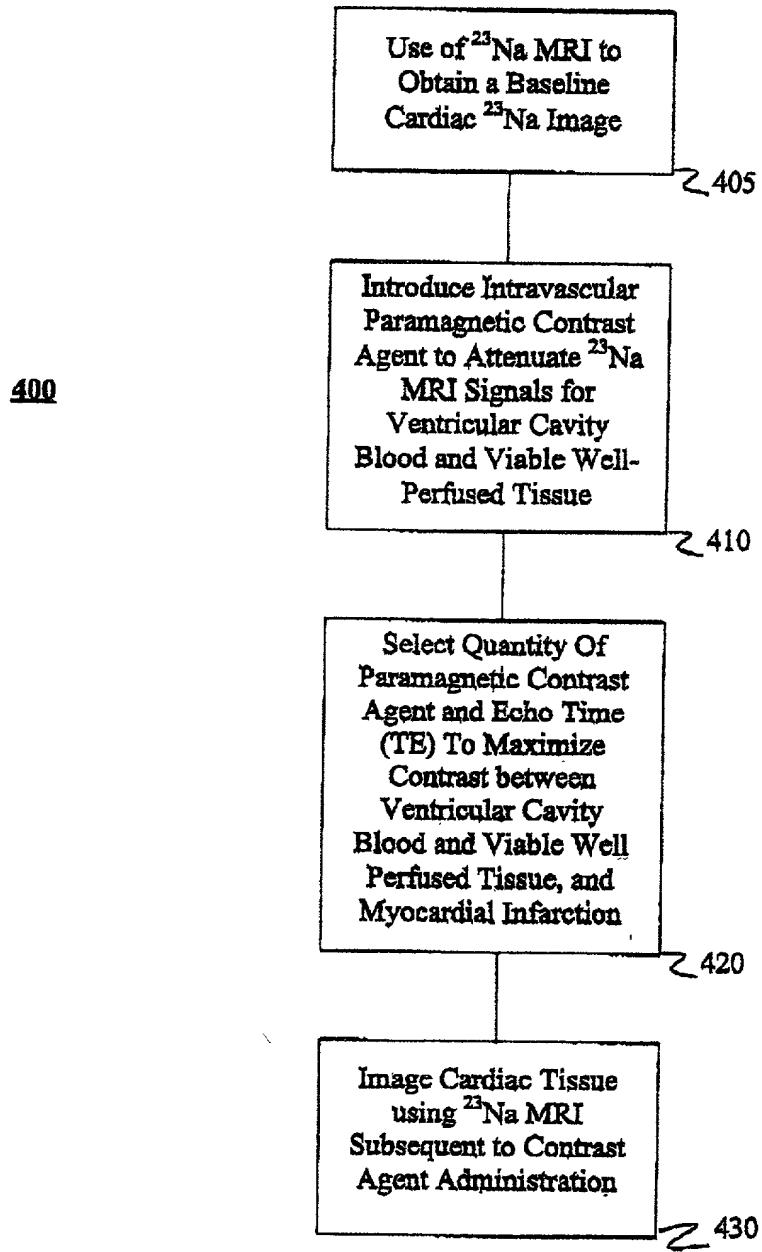
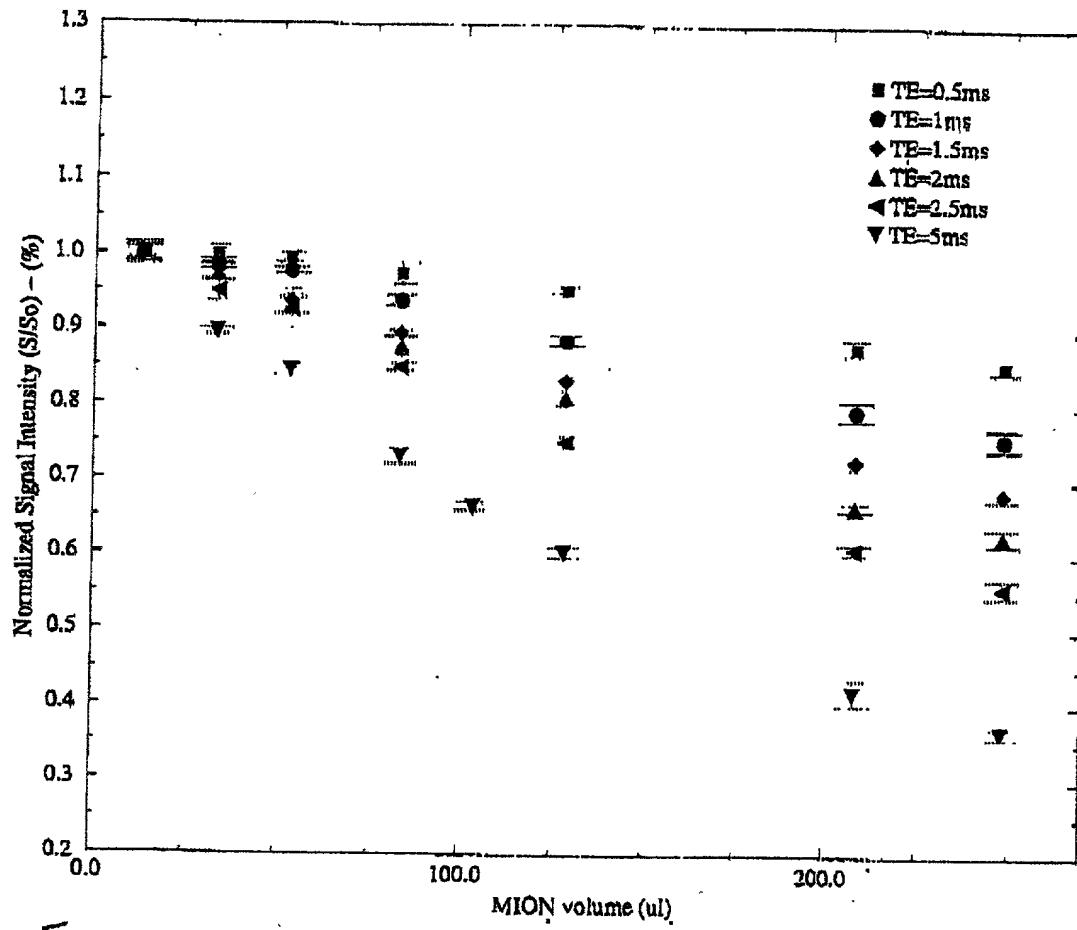


Fig. 4



**Figure 5:** Normalized signal intensity variation with MION volume at different echo times (0.37-5 ms) in 80 ml of isolated canine blood. Larger MION volume and echo times lead to larger signal intensity reductions.

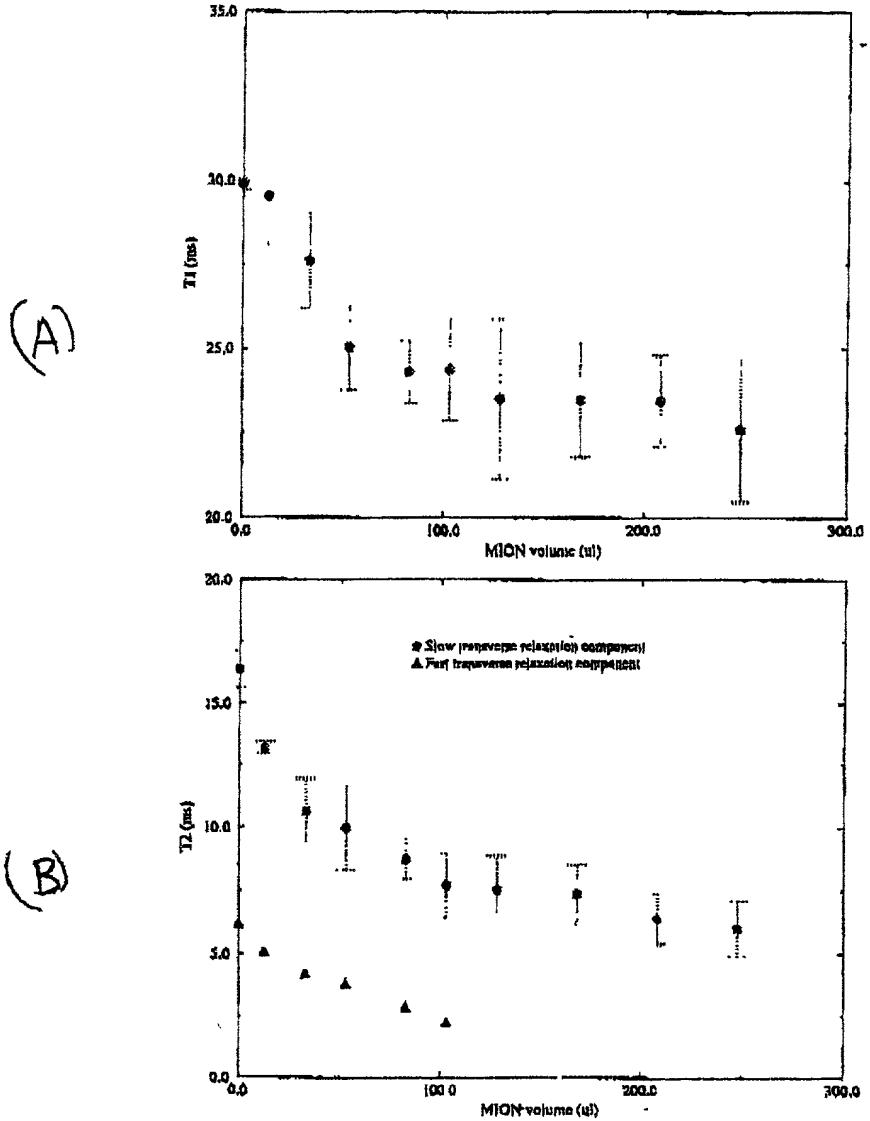


Figure 6 Blood (A)  $T_1$  and (B)  $T_2$  variation curves vs. MION volume in 80 ml of canine blood *in vitro*.

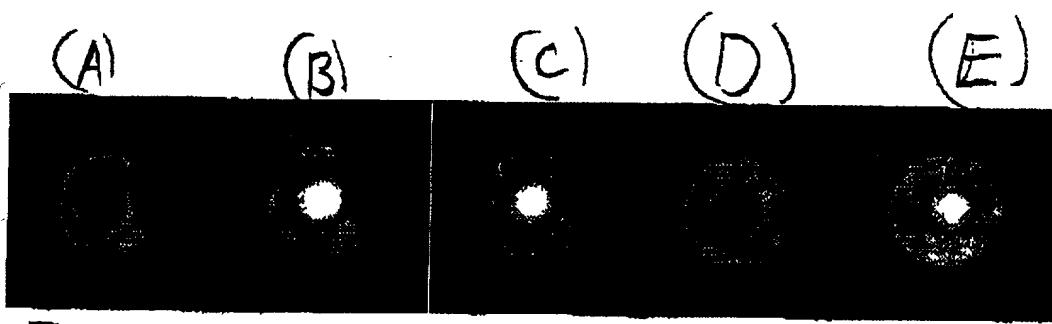


Figure 7 Two compartment annular cylindrical phantom. (A) Coronal image of the agarose gel mixed with NaCl (65 mM) at TE=0.37 ms; identical image with added blood at (B) TE=0.37 ms, and at (C) TE=5 ms. (D) Post-contrast image at TE=5 ms and at (E) TE=0.37 ms.



Figure 8 (A) Pre- and (B) post-contrast sequential contiguous axial  $^{23}\text{Na}$  images from an *in vivo* dog heart. Left ventricular blood and kidney regions appear hyper-intense due to their higher sodium content.

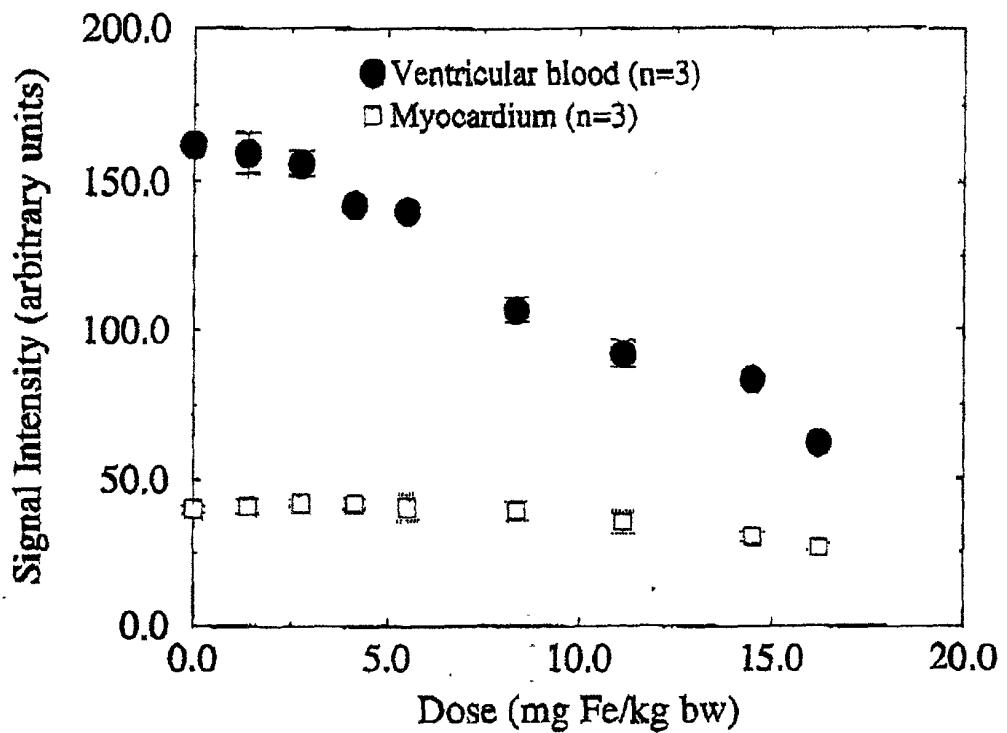


Figure 9: Signal variation of myocardial and ventricular blood regions with MION dose in *in vivo* dog hearts (TE=5 ms). Standard deviations represent signal variability from the three animals studied.



Figure 6 (A) Pre-contrast short axis  $^{23}\text{Na}$  MRI of an infarcted dog at  $\text{TE}=0.37$  ms, and post-contrast images at (B)  $\text{TE}=0.37$  ms, and at (C)  $\text{TE}=5$  ms. (D) Corresponding TTC-stained slice (arrows indicate the location of MI).